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DECLARATION IN SUPPORT OF AN APPLICATION FOR A PATENT

FEE STAMPS

(a) Here insert (in full) Name of Applicant(s)

In support of the Application made by [a] MICHAEL JOHN COTTERILL

for a patent for an invention entitled:

(b) Here insert Title of Invention.

[b] "KEYBOARD SUPPORT APPARATUS"

I/~~We~~, [a] MICHAEL JOHN COTTERILL

(c) Here insert (in full) Address(es).

of [c] 43 Rocklea Crescent, Sylvania Heights, New South Wales 2224

do solemnly and sincerely declare as follows:

1. I am/~~are~~ are the Applicant(s) for the Patent.
2. I am/~~are~~ the actual Inventor(s) of the invention ~~(or, where a person other than the Inventor is the Applicant).~~

(d) Here insert full Name(s) and Address(es) of Actual Inventor(s) if other than Applicant(s).

2. [d] _____ is/are the actual Inventor(s) of the invention and the facts upon which I am/we are entitled to make the Application are as follows:

~~I am/We are the Assignee(s) of the said Inventor(s).~~

DECLARED at Sydney

this 22ND day of FEBRUARY 1989

(e) Signature(s) of Applicant(s). [e] Michael John Cotteril

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SHELSTON WATERS
PATENT ATTORNEYS
55 CLARENCE STREET, SYDNEY
AUSTRALIA

SW19

(12) PATENT ABRIDGMENT (11) Document No. AU-B-79179/87
(19) AUSTRALIAN PATENT OFFICE (10) Acceptance No. 592229

(54) Title
KEYBOARD SUPPORT APPARATUS

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(87) WIPO Number : WO88/01481

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(71) Applicant(s)
MICHAEL JOHN COTTERILL

(72) Inventor(s)
MICHAEL JOHN COTTERILL

(74) Attorney or Agent
SHELSTON WATERS

(56) Prior Art Documents
US 4625657
US 3866866
US 1662675

(57) Claim

5. (amended) A keyboard support apparatus comprising:

a first bracket and a second bracket interconnected by first, second and third elongate members; said first and second elongate members are pivotally attached by means of a first pivot pin to said first bracket; said first elongate member is also pivotally attached by means of a second pivot pin to said second bracket; said third elongate member is pivotally attached by means of a third pivot pin to said first bracket; said second and third elongate members are adapted to co-operate with a fourth pivot pin associated with said second bracket, and said fourth pivot pin is adapted to releasably

engage said second and third elongate members; the arrangement being such that, in use, one of the first and second brackets is connected to a supporting surface and the other to a keyboard, and the elongate members, when released frcm engagement with the second bracket, are moveable substantially in the same plane.

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(11) International Publication Number: WO 88/ 01481

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(71)(72) Applicant and Inventor: COTTERILL, Michael, John [AU/AU]; 43 Rocklea Crescent, Sylvania Heights, NSW 2224 (AU).

(74) Agent: SHELSTON WATERS; 55 Clarence Street, Sydney, NSW 2000 (AU).

(81) Designated States: AT (European patent), AU, BE (European patent), CH (European patent), DE (European patent), FR (European patent), GB (European patent), IT (European patent), JP, LU (European patent), NL (European patent), SE (European patent), US.

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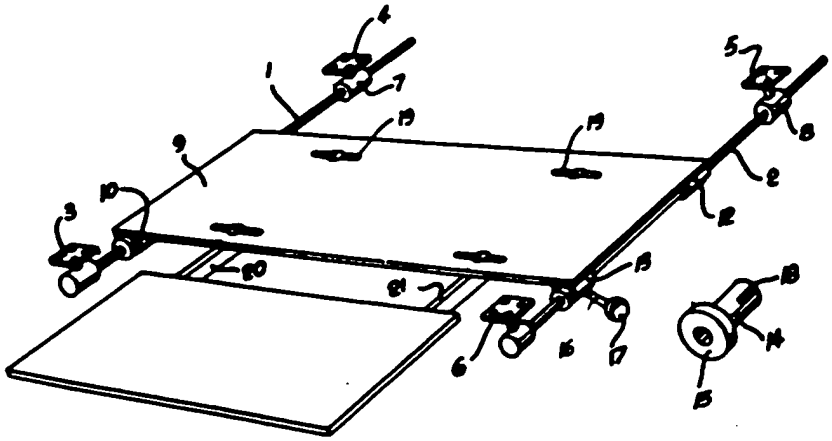
With international search report.

(54) Title: KEYBOARD SUPPORT APPARATUS



(57) Abstract

A keyboard support apparatus includes two substantially rigid parallel rods (1 and 2). Each of the rods has a first respective bracket (3 and 6) at one end. Each rod is also slidably connected to a second respective bracket (4 and 5). Also the rods are interconnected via keyboard mounting body (9) which makes a slidable connection with each rod. A manually operable screw (16) fits into a threaded hole in the mounting body (9) and may be adjusted to bear against one of the rods (1 or 2) and thereby prevent the mounting body (9) from sliding along the rods (1 and 2). A keyboard or a keyboard shelf is mounted in front of the keyboard mounting body (9) by means of a further structure which connects the underside of the keyboard or shelf to the underside of the mounting body (9). When the support apparatus is screwed to the underside of the desk the keyboard may be slid under the desk or pulled out in front of the desk. A preferred structure for mounting the keyboard onto the keyboard mounting body is also described.

optimum working position.

Disclosure of Invention

According to the invention there is provided a keyboard support apparatus comprising:

a first bracket and a second bracket interconnected by first, second and third elongate members; said first and second elongate members are pivotally attached by means of a first pivot pin to said first bracket; said first elongate member is also pivotally attached by means of a second pivot pin to said second bracket; said third elongate member is pivotally attached by means of a third pivot pin to said first bracket; said second and third elongate members are adapted to co-operate with a fourth pivot pin associated with said second bracket, and said fourth pivot pin is adapted to releasably engazge said second and third elongate members; the arrangement being such that, in use, one of the first and second brackets is connected to a supporting surface and the other to a keyboard and the elongate members, when released from engagement with the second bracket, are moveable substantially in the same plane.

Brief Description of Drawings

A preferred embodiment will now be described by way of example only with reference to the accompanying drawings in which:

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Figure 1 (deleted);

Figure 2 (deleted);

Figure 3 shows a perspective view of keyboard support apparatus embodying the invention;

Figure 4 shows a detail of part of the keyboard support apparatus shown in Figure 3;

Figure 5 shows a side view of the keyboard support apparatus shown in Figure 3 at one extreme of its travel; and

Figure 6 shows a side view of the keyboard support apparatus shown in Figure 3 at the other extreme of its travel.

Best Mode for Carrying out Invention

Referring now to figures 3-6 keyboard attaching bracket 22 to which a keyboard or shelf may be bolted, is connected to keyboard mounting block attaching bracket 23 by means of two parallel elongate members 24 and 25. Elongate member 24 is attached to bracket 23 by means of pivot pin 27, and attached to bracket 22 by means of pivot pin 26. Elongate member 25 is attached to bracket 23 by means of pivot pin 28, and is attached to bracket 22 by means of pivot pin 29 which resides in longitudinal slot 30 of elongate member 25.

A third elongate member 31 interconnects brackets 22 and 23. Elongate member 31 is attached to bracket 23

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by means of pivot pin 27 and is attached to bracket 22 by means of pivot pin 29 which engages in longitudinal slot 32 of member 31.

Bracket 22 is connected at one side of the underside of a keyboard, and bracket 23 is connected at one side of the underside of keyboard mounting body 9 (for instance by bolts which pass through holes in the overhang 35 of bracket 25 and through the holes or slots 19 of mounting body 9). Further brackets 33 and 34 are connected to the other sides of the keyboard and mounting body in order to prevent rotation of the keyboard with respect to the mounting body. Brackets 33 and 34 are interconnected by a further elongate member 35 which is pivotally attached at either end by means of pivot pins 36 and 37 respectively. An alternative arrangement would be to connect brackets 22 and 23 at the centres of the keyboard and keyboard mounting body, in which case brackets 33 and 34 could be dispensed with.

A cross member 38 provides the final degree of stability to the structure.

A comparison of Figures 5 and 6 will indicate that only a limited amount of pivotal movement is possible by elongate members 24 and 25 around pivot pins 27 and 28. The precise amount of movement permitted is determined by the length of the slot 30. In Figure 6 it can be

seen that bracket 22 may be tilted in a clockwise direction about pivot 26 an amount determined by the length of either slot 30 or slot 32.

It should be appreciated that rotation is possible by any desired amount between the two extreme positions shown in Figures 5 and 6 respectively. Also, at any intermediate position between the two extremes shown some degree of tilt is possible.

Pivot pin 29 is essentially a threaded bolt, that is at least some part of the pin which extends beyond the surface of elongate member 25 is threaded. A nut, preferably turnable by hand, may be tightened or loosened on the threaded portion of pivot pin 29 in order to clamp or release elongate members 25 and 31, and bracket 22. This is illustrated in greater detailin Figure 4. It is an advantage of this arrangement that the structure may be adjusted to desired angle and tilt with one hand.

To facilitate operation and to counteract the weight of the keyboard a spring 39 may be provided connecting the elongate member 25 and bracket 22. Spring 39 comes under greater tension when bracket 22 is moved downwards with respect to bracket 23. That is when the arms of the spring are compressed together. This has the effect of returning the desktop to the

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horizontal.

A further spring 40, for instance a coil spring, may connect an overhang 35 of bracket 23 to elongate member 25. This spring also comes under greater tension when bracket 22 is moved downwards with respect to bracket 23. The action of the spring therefore serves to return bracket 22 and therefore the keyboard, to its highest position.

Although the invention has been described with reference to a specific example, it will be appreciated by those skilled in the art that the invention may be embodied in many other forms. For instance, the invention has been described with reference to structures suitable for right-hand operation when mounted under the operator's desk, but it should be clear that left-handed operation is equally possible and may be facilited by mirror image construction. It is also feasilbe that dual-controls may be provided on either side of the structure, both or either of which may be used to control the movements. It should also be appreciated that the shapes of all the brackets and bodies need not be limited to those shown. Also the elongate members and rods need not have the cross section shown.

CLAIMS

1. (deleted)

2. (deleted)

3. (deleted)

4. (deleted)

5. (amended) A keyboard support apparatus comprising:

a first bracket and a second bracket interconnected by first, second and third elongate members; said first and second elongate members are pivotally attached by means of a first pivot pin to said first bracket; said first elongate member is also pivotally attached by means of a second pivot pin to said second bracket; said third elongate member is pivotally attached by means of a third pivot pin to said first bracket; said second and third elongate members are adapted to co-operate with a fourth pivot pin associated with said second bracket, and said fourth pivot pin is adapted to releasably engage said second and third elongate members; the arrangement being such that, in use, one of the first and second brackets is connected to a supporting surface and the other to a keyboard, and the elongate members, when released from engagement with the second bracket, are moveable substantially in the same plane.

6. (new claim) A keyboard support apparatus as claimed in Claim 5 wherein:

the second and third elongate members each have a slot in which the fourth pivot pin resides, and the fourth pivot pin is threaded to adjustably co-operate with a manually operable nut to releasably clamp the second and third elongate members.

7. (amended and renumbered) A keyboard support apparatus as claimed in Claim 5 in which a first spring interconnects said third elongate member and said second bracket such that the first spring comes under greater tension when the second bracket is moved downwards with respect to the first bracket.

8. (amended and renumbered) A keyboard support apparatus as claimed in Claim 7 in which a second spring interconnects an overhang of the first bracket and the third elongate member such that the second spring comes under greater tension when the second bracket is moved downward with respect to the first bracket.

9. (amended and renumbered) A keyboard support apparatus substantially as herein described with reference to figures 3, 4, 5 and 6 of the accompanying drawings.

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FIG.1

FIG. 2

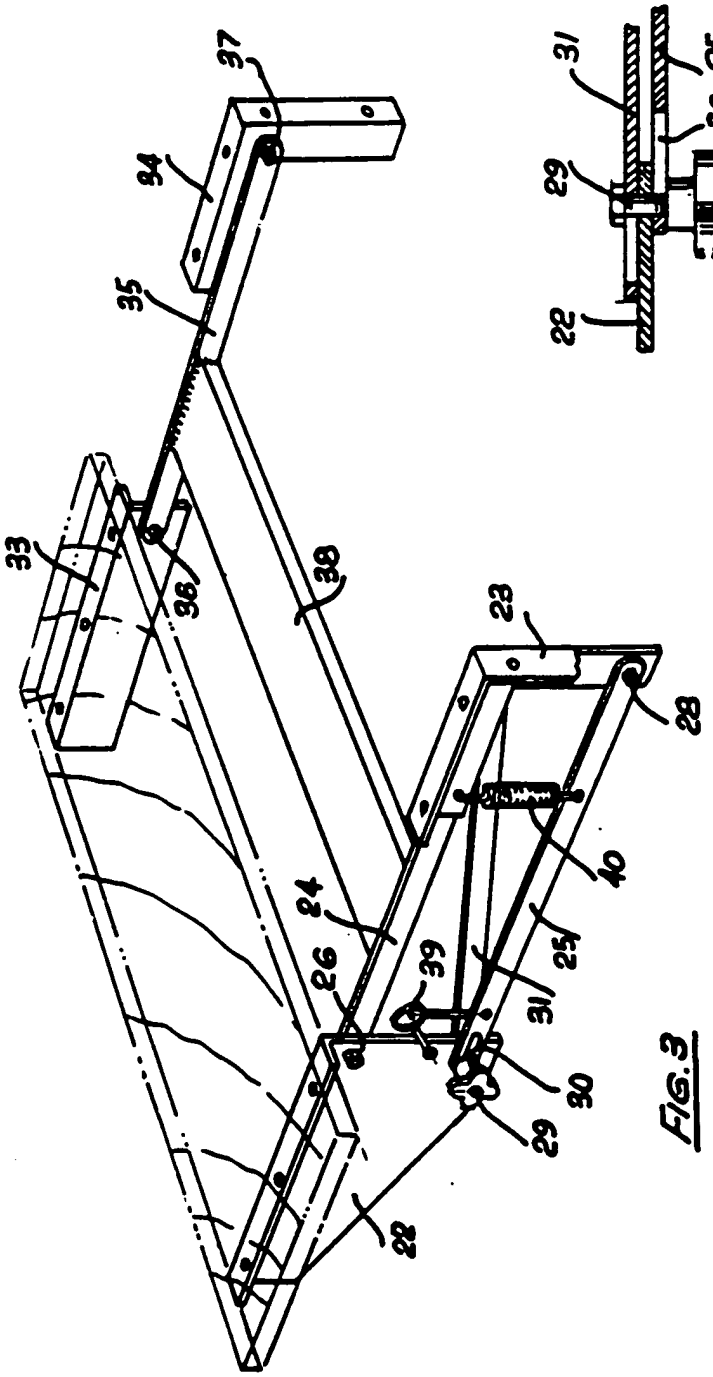

FIG.3

FIG.4

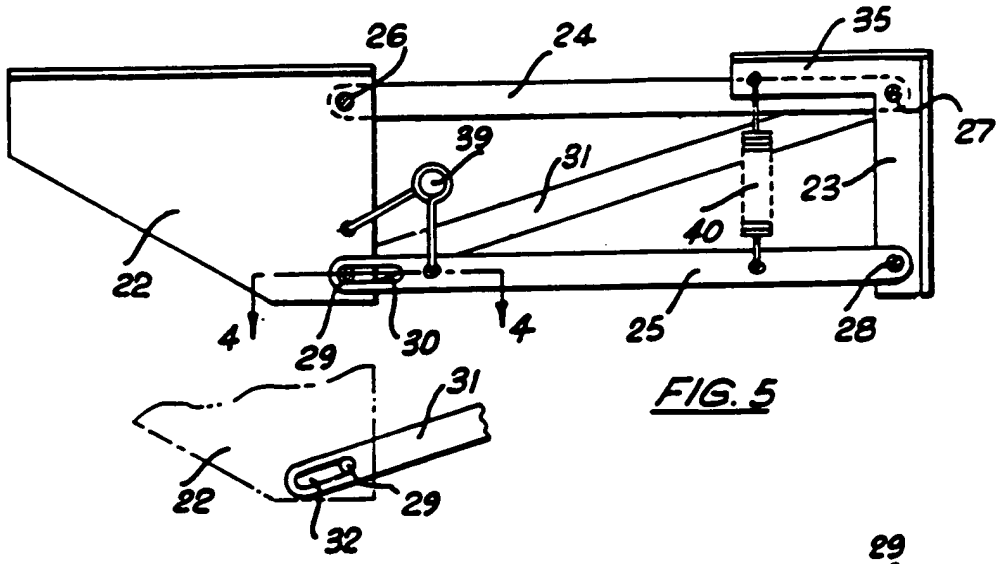
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FIG. 5

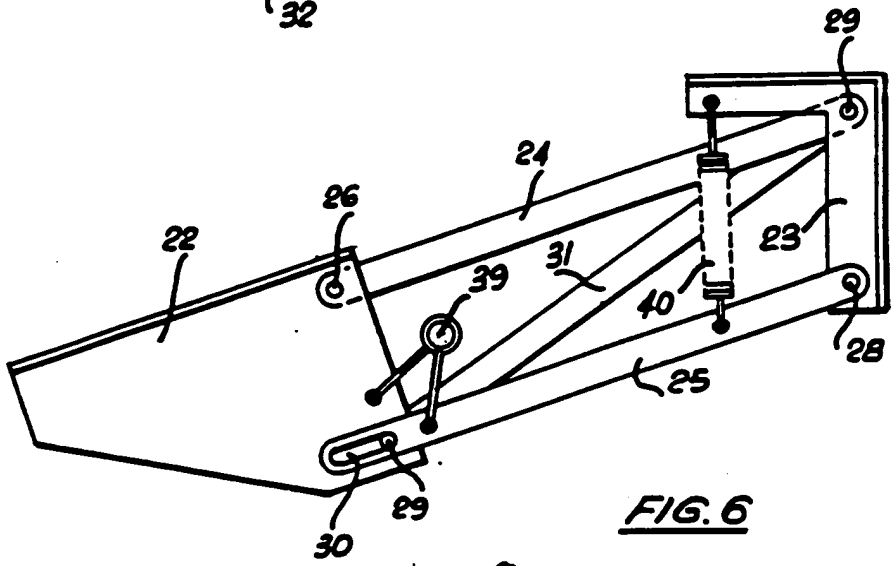
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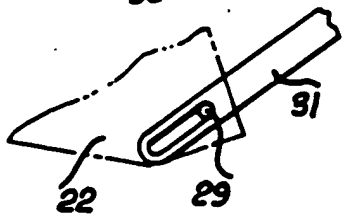
FIG. 6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INTERNATIONAL SEARCH REPORT

International Application No PCT/AU 87/00289

I. CLASSIFICATION OF SUBJECT MATTER

According to International Patent Classification (IPC) or to both National Classification and IPC

Int. Cl.[4] A47B 21/03

II. FIELDS SEARCHED

Minimum Documentation Searched

Classification System	Classification Symbols
IPC	A47B 21/03
US Cl.	108/5, 108/138

Documentation Searched other than Minimum Documentation to the Extent that such Documents are Included in the Fields Searched

AU : IPC as above

III. DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of Document, with indication, where appropriate, of the relevant passages	Relevant to Claim No.
P,Y	US,A, 4644875 (WATT) 24 February 1987 (24.02.87)	(1-8)
Y	US,A, 1662675 (INNES) 13 March 1928 (13.03.28)	(1-8)
Y	US,A, 4625657 (LITTLE) 2 December 1986 (02.12.86)	(1-8)
Y	US, 3866866 (KNEILE) 18 February 1975 (18.02.75)	(1-8)

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"P" document published prior to the international filing date but later than the priority date claimed
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"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
"&" document member of the same patent family

IV. CERTIFICATION

Date of the Actual Completion of the International Search	Date of Mailing of the International Search Report
19 November 1987 (19.11.87)	30-11-87 30 NOVEMBER 1987
International Searching Authority	**Signature of Authorized Officer**
Australian Patent Office	P. WARD

Form PCT/ISA/210 (second sheet) (January 1985)

ANNEX TO THE INTERNATIONAL SEARCH REPORT ON
INTERNATIONAL APPLICATION NO. PCT/AU 87/00289

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report	Patent Family Members					
US 3866866	AT	323934	DE	2261733	DK	140042
	SE	406261	YU	36423		

END OF ANNEX